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09/837,105	04/18/2001	Hajime Kimura	SEL 253	9007

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COOK, ALEX, McFARRON, MANZO,  
CUMMINGS & MEHLER, LTD.  
SUITE 2850  
200 WEST ADAMS STREET  
CHICAGO, IL 60606

EXAMINER

DONG, DALEI

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/837,105

Applicant(s)

KIMURA, HAJIME

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/837,105.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,011,529 to Ikeda in view of U.S. Patent No. 5,771,328 to Wortman.

Regarding to claims 1-77, Ikeda discloses in Figures 11, “an active matrix drive circuit according to the third embodiment of the present invention. In FIG. 11, reference numeral 41 denotes an amorphous silicon thin-film field-effect transistor (hereinafter referred to as "TFT") of a reverse-stagger structure as a driving transistor, numeral 42 a data line, numeral 43 a scanning line, numeral 44 an electron-injection electrode, numeral 45 a capacitance line for forming capacitance relative to the electron-injection electrode 44” (column 10, line 32-40).

Ikeda also discloses in Figure 12, “numeral 46 denotes a transparent glass substrate, numeral 47 a gate insulating film, numeral 48 a gate electrode of the TFT 41, numeral 49 an island of the TFT 41, numeral 50 a source electrode of the TFT 41, and numeral 51 a drain electrode of the TFT 41. Further, in FIG. 12, numeral 52 denotes an electron-injection electrode formed of MgAg, numeral 53 a contact hole, numeral 54 organic thin-film layers composed of a spacer layer 54A, an organic luminescent layer

54B and a hole-injection layer 54C and forming an organic thin-film EL element of a charge-injection type as a light-emitting element, numeral 55 a hole-injection electrode formed of ITO (indium-tin-oxide) for guiding out light, and numeral 56 a light-emitting element insulating film” (column 10, line 42-55).

However, Ikdea does not disclose a light scattering body. Wortman teaches in Figure 1, “This film 10 may be manufactured from a suitable polymeric, acrylic, polycarbonate, UV-cured acrylate, or like material and has a smooth surface 14 and a structured surface 12 opposite the smooth surface. The structured surface 12 includes an array of linear prism elements 16 arranged side by side to form a plurality of peaks 17 and grooves 18 running the length of the film. In use, light which is incident upon the smooth surface 14 of this film at a relatively high incidence angles is refracted at the smooth surface 14 and the structured surface 12 of the film and is redirected toward an axis which is perpendicular to the smooth surface of the film. Additionally, light which strikes the structured surface 12 at greater than the critical angle undergoes total internal reflection from both side surfaces, or facets, 20 of a prism element 16 and is directed back into the display, where it may be recycled by a reflective surface. By a combination of refraction and total internal reflection, the film 10 increases the amount of light which is directed ‘on axis’ and decreases the amount of light which is directed ‘off axis’” (column 3, line 20-39).

Wortman also teaches in Figure 3, “light directing film in accordance with the present invention. The film 30 includes a first surface 32 and an opposing structured surface 34 which includes a plurality of substantially linearly extending prism elements

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36. Each prism element 36 has a first side surface 38 and a second side surface 38', the top edges of which intersect to define the peak, or apex 42 of the prism element 36. The bottom edges of side surfaces 38, 38' of adjacent prism elements 36 intersect to form a linearly extending groove 44 between prism elements. In the embodiment illustrated in FIG. 3, the dihedral angle defined by the prism apex 42 measures approximately 90 degrees, however it will be appreciated that the exact measure of the dihedral angle in this and other embodiments may be varied in accordance with desired optical parameters. It is known in the art to use prism elements having dihedral angles which measure between 70.degree. degrees and 110.degree.” (column 3, line 60-67 to column 4, line 1-9).

Wortman further teaches “the structured surface 34 of film 30 may be described as having a plurality of alternating zones of prism elements having peaks which are spaced at different distances from a common reference plane. The common reference plane may be arbitrarily selected. One convenient example of a common reference plane is the plane which contains first surface 32; another is the plane defined by the bottom of the lower most grooves of the structured surface, indicated by dashed line 39. In the embodiment illustrated in FIG. 3, the shorter prism elements measure approximately 50 microns in width and approximately 25 microns in height, measured from dashed line 39, while the taller prism elements measure approximately 50 microns in width and approximately 26 microns in height. Importantly, the width of the zone which includes the taller prism elements preferably measures between about 1 micron and 300 microns. By contrast, the width of the zone which includes the shorter prism elements is not

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critical and, in the disclosed embodiment, measures between 200 microns and 4000 microns. It is preferable, however, that in any given embodiment the zone of shorter prism elements be at least as wide as the zone of taller prism elements. It will be appreciated by one of ordinary skill in the art that the article depicted in FIG. 3 is merely exemplary and is not intended to limit the scope of the present invention. For example, the height or width of the prism elements may be changed within practicable limits--it is practicable to machine precise prisms in ranges extending from about 1 micron to about 175 microns. Additionally, the dihedral angles may be changed or the prism axis may be tilted to achieve a desired optical effect” (column 4, line 10-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilize the light directing film of Wortman for the display device of Ikeda in order to reduces undesirable optical coupling between adjacent sheets of light directing film without sacrificing the optical performance of the article and further controls undesirable optical coupling between its structured surface and an adjacent surface.

### ***Response to Arguments***

3. Applicant's arguments filed July 17, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

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where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Ikeda reference discloses a light-emitting elements which is utilized in displays is arranged in a matrix configuration, and Wortman teaches a light directing film for use in optical displays which reduces undesirable optical coupling between adjacent sheet of light directing film without sacrificing the optical performance of the article. Therefore, Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the light directing film of Wortman for the optical device of Ikeda, thus Examiner maintains that the combination of the two references is valid and maintains the rejection.

In response to applicant's argument that Wortman reference does not discloses "an angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees", Examiner asserts that Wortman teaches in Figure 3, "the dihedral angle defined by the prism apex 42 measures approximately 90 degrees, however it will be appreciated that the exact measure of the dihedral angle in this and other embodiments may be varied in accordance with desired optical parameters. It is known in the art to use prism elements having dihedral angles which measure between 70.degree. degrees and 110.degree" (column 4, line 3-9). Further, Wortman teaches the angle "may be varied in accordance with desired optical parameter", since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, Examiner asserts that the Wortman reference is valid and thus maintains the rejection.

In response to applicant's argument that Wortman reference does not teach "a thickness (H) of the light scattering body has a relation of  $H \geq W1$  with respect to a pitch (W1) of the light scattering body", Wortman reference clearly and concisely shown in Figures 3-6, different embodiments where the thickness of the light-scattering body is greater than or equal to the pitch of the light-scattering body, for example in Figure 4, the taller prism element 56 (*light-scattering element*) has a thickness that is greater or equal to the pitch of the shorter prism element 54 (*light-scattering element*). Thus, Examiner asserts that Wortman reference is valid and maintains the rejection.

In response to applicant's argument that Wortman fails to teach "a pixel pitch is at least twice as long as a pitch of the light scattering body", Examiner assert that Ikeda discloses EL element 1 is used in a display for a personal computer having 640 pixels in row and 480 pixels in column and with a diagonal length of 24 cm, and that a pixel size of each EL element 1 is 300 mm.times.300 mm" (column 7, line 28-32). On the other hand the pitch of the light scattering body of Wortman is on the order of microns, therefore, Examiner asserts that Ikeda reference in view of Wortman reference is valid and maintains the rejection.



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***Conclusion***


4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

  
Sandra O'Shea  
Supervisory Patent Examiner  
Technology Center 2800

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D.D.

July 31, 2003